Cutaneous Melanoma in an Active Duty Soldier

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The incidence of cutaneous melanoma has increased exponentially in the last 50 years. In 1935 the lifetime risk of developing melanoma was 1:1500; by the mid-1980s the risk had increased to more than 1:150. If the increase continues, the estimated lifetime risk will be 1:90 in the year 2000.[1] The clinical criteria are: Asymmetry, irregular border, color variegation, and a diameter greater than 6 mm.[2] This report describes the occurrence of melanoma in an active duty troop. The authors wish to stress the importance of early detection of cutaneous melanoma and the inclusion of melanoma in the differential diagnosis on physical examination of young people.

Case Report

An 18-year-old active duty soldier presented to the clinic for evaluation of a mole on his right upper back that had been present for at least 2 years. Information provided at the time of his induction physical was remarkable only for "mild acne scarring on the back." There was no family history of skin cancer, although the patient has a history of multiple sunburning episodes.

He had fair skin, light-colored hair, and blue eyes. There was a 1.2 cm by 1.5 cm brown to black-colored plaque involving the right upper back (Fig 1). The borders were irregular and the color varied throughout the lesion. The plaque was excised with 1 mm margins.

On histologic examination there were atypical nests of epithelioid cells within the epidermis extending into the dermal regions to a depth of 2.5 mm. There were numerous mitotic figures and abundant melanin within melanophages. The margins were clear. These features were interpreted as being consistent with the diagnosis of malignant melanoma.

A chest roentgenogram and chest CT scan were normal. Serum lactate dehydrogenase (LDH) levels were also normal. Additional surgical margins were taken (3 cm diameter from original site) and a split-thickness graft performed at the site.

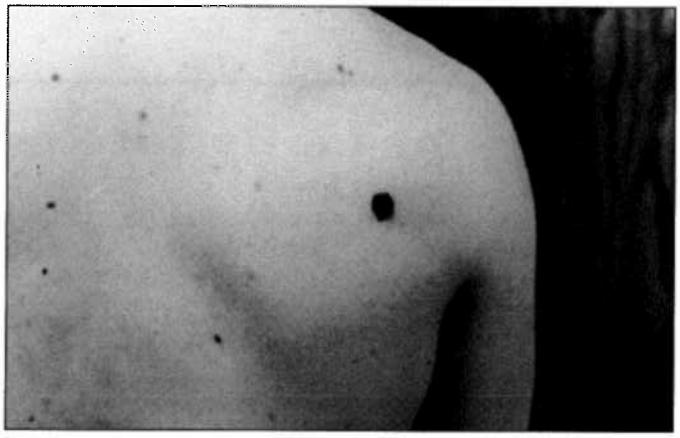

Fig 1.—1.2 cm by 1.5 cm brown to black plaque over right shoulder region.

Discussion

Active duty military personnel are at an increased risk for developing skin cancer from increased ultraviolet exposure. Ramani et al[3] surveyed 370 World War II veterans with skin cancer in reference to station location, place of service, skin cancer types, skin type, ethnic background, and estimated average hours outdoors per day during their lifetime. More patients with skin cancer were stationed in the Pacific (66%) than in Europe (34%) during the war (statistically significant on chi-square test). The authors conclude: 1) this study links early, time-limited, but intense sun exposure with the development of cutaneous malignancy years later; 2) persons with heavy sun exposure in the South Pacific or in Vietnam should be counseled to avoid future sun exposure; and 3) military personnel who serve in tropical and subtropical climates should be advised to avoid sunburns and use sunscreens regularly.

In another military study performed by Garland et al[4] person-years at risk and cases of malignant melanoma were determined using computerized service records and inpatient hospitalization files maintained at the Naval Health Research Center. There were a total of 176 confirmed cases of melanoma between 1974 to 1984. Occupations were categorized into indoor, outdoor, or indoor/outdoor groups. Compared to the U.S. civilian population, Navy personnel with indoor occupations had a higher age-adjusted incidence rate of melanoma (10.6 per 100,000). Individuals who worked in occupations requiring both indoor and outdoor exposure had the lowest rate (7.0 per 100,000). Two single occupations were found to have elevated rates of melanoma: Aircrew survival equipmentman and engineman. Incident rates were found to be higher on the trunk than on more

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commonly sunlight-exposed areas, such as the head and arms. Melanoma is second only to testicular cancer in men serving in the U.S. Navy.

Since cutaneous melanoma is potentially curable by surgical excision, early detection and removal of such lesions would reduce mortality.[5] This can happen only through public and professional education programs with particular emphasis on targeting high risk individuals. Fair skin, light hair color, freckles in adolescence, family members with melanoma, a changing mole, or severe sunburns are significant risk factors.[6-7] Since military personnel have been shown to be at increased risk for all types of skin cancer, thorough cutaneous examination should be considered an important part of the physical examination of active duty troops regardless of age. Suspicious lesions should be biopsied for histologic examination.

References

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16 Tips for Better Research Protocol Writing

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U.S. Army medical and pharmacy residents are often required to perform research. After a research question has been identified, many residents find themselves stuck in writers' block when trying to write the protocol. Whether the research is basic science or clinical in nature, these 16 tips will help decrease the amount of time spent idly stuck in writers' block or performing rewrites and in turn, will expedite the process of Institutional Review Board (IRB) approval.

1. **Be clear and concise.** Don't be too wordy. Get rid of any words, sentences or phrases you do not need. A protocol that is too wordy will be seen as such.
2. **Don't try to impress the IRB with technobabble.** A protocol filled with technical words used inappropriately will hurt you in the long run. IRB members will easily identify this strategy and will confront you about it.
3. **Use the format designated by the IRB.** The order in which information is presented is as important as the content of your protocol. Follow the protocol layout recommended by the IRB. If you fail to do this, you will be asked to rewrite your protocol.
4. **Follow scientific method.** Address *introduction, objective, hypothesis, design, methods, and data analysis* as separate sections in the protocol layout. Do the same when writing your completed research for publication with the addition of *abstract, results, discussion and conclusion* sections. These sections will be contained in the format designated by the IRB, but will be identified by different names. Make sure you use the names recommended by the IRB.
5. **Specify study type and design.** Some key study designs are prospective, retrospective, single-blind, double-blind, open, randomized, sequential, crossover, placebo, standard control and case control. Examples of study types include human use, animal use, basic science, and survey.
6. **Write according to the IRB required style.** If the IRB does not specify a style, use the style recommended by the journal in which you plan to publish your manuscript. Most medical journals use *Uniform Requirements for Manuscripts Submitted to Biomedical Journals (JAMA.* 1993;269:2282-6) and *American Medical Association Manual of Style* as standard writing requirements.
7. **Write the introduction last.** Start somewhere in the middle. Writer's block occurs most often when you try to write a summary before you have written the experiment. Start wherever is most comfortable for you. Most researchers find that starting at the *design or methods* section is the easiest.
8. **Cite results of related studies.** IRB members will want to know where your study stands in the scientific arena and what contribution it will make to the literature. Cite only articles that are relevant to your study proposal.
9. **Sell your idea.** In response to decreased dollars for research funding, the IRB has to cut the number of protocols that are funded. Explain why your study will be an important addition to the literature or how it will affect hospital policy. If your study will save the hospital money, make that point very clear.
10. **Stay within a reasonable budget.** Ask for enough money to complete the project, but don't overestimate your budget. If your study is too expensive or if it is padded with unnecessary costs, it will not be funded. Also consider alternative forms of financing for your research, such as obtaining grants and collaborating with other institutions.
11. **Clarify monetary issues.** Don't assume you have the support of all departments involved in your project. Many principal investigators neglect to include funding for medications, supplies, and time required from other departments or services in their budgets. Seek advice and approval from all departments involved before submitting your protocol.
12. **Don't forget ethics.** Make sure your study is ethical to all study participants. Address any anticipated concerns they may have both in the protocol and consent form. A good review of ethical issues is the "Belmont Report," *Federal Register* 79-12065 or call U.S. Food and Drug Administration, Office of Health Affairs, (301) 443-1382.
13. **Make sure the consent form is written at appropriate reading level.** All study participants must be able to read and understand the form. Make sure the plan, risks and termination procedures are clearly explained. Write the form at a Grades 5 to 8 reading level.
14. **Check spelling and grammar.** Run your protocol through both the spell and grammar check on your computer.
15. **Read your protocol out loud.** The spell check and grammar check are not perfect. Words can be spelled correctly but may be used incorrectly in that context. This may not be evident until you *hear* the mistake.
16. **Have someone proofread your proposal.** Recruit two or more people to proofread your protocol if you can. Preferably get someone in your field of expertise and someone who does a lot of writing, editing, or typing.